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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/943,190	08/29/2001	Kristy A. Campbell	MI22-1668	8483

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THOMAS J. D'AMICO
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2101 L STREET NW
WASHINGTON, DC 20037-1526

EXAMINER

ROCCHEGIANI, RENZO

ART UNIT	PAPER NUMBER
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2825

DATE MAILED: 06/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/943,190

Applicant(s)

CAMPBELL ET AL.01

Examiner

Renzo N. Rocchegiani

Art Unit

2825

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 March 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) 31-41 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30, 42-45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1-30 and 42-45 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-89 of copending Application No. 09/943,187. Although the conflicting claims are not identical, they are not patentably distinct from each other because while the copending application (i.e. '187) claims the additional step of exposing the material to iodine, the claims of the present application do not limit the process from additional steps, further the '187 application claims that the chalcogenide material is partially doped and because the amount of doping is recognized to reflect the crystallinity and thus the property of the final chalcogenide member, it is a result effective variable and because such doping is dependent upon the thickness of the metal layer deposited over the chalcogenide, such thickness is also result effective and thus obvious to optimize.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

3. Claims 1-30 and 42-45 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-33 of copending Application No. 09/943,199. Although the conflicting claims are not identical, they are not patentably distinct from each other because while the copending application (i.e. '199) claims the additional step of forming a passivation layer, the claims of the present application do not limit the process from additional steps, further the '199 application claims that the chalcogenide material is partially doped and because the amount of doping is recognized to reflect the crystallinity and thus the property of the final chalcogenide member, it is a result effective variable and because such doping is dependent upon the thickness of the metal layer deposited over the chalcogenide, such thickness is also result effective and thus obvious to optimize.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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5. Claims 1-6, 11-16, 20, 23-24, 26-29 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,638,820 B2 (Moore).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Moore discloses a process to form a chalcogenide comprising non-volatile resistance device (col. 6, lines 7-9) comprising depositing a first electrode layer (item 16), depositing a chalcogenide material comprising Se and Ge (item 22 and col. 4, lines 16-25). Over the chalcogenide material a metal layer such as silver is deposited. (item 24, col. 4, lines 29-31). The thickness of the silver can be as low as one third the thickness of the chalcogenide material. (col. 4, lines 34-36). The structure is then irradiated so that the metal migrates into the chalcogenide material and breaks the chalcogenide bond at the interface with the metal thereby producing a homogeneous (col. 5, lines 40-50) amorphous, silver doped chalcogenide structure (item 23, col. 4, lines 36-50 and col. 5, lines 37-43). Finally, a second electrode layer is deposited over the chalcogenide material and shaped into an electrode device. (item 26)

Moore does not explicitly disclose that the concentration of Ge is higher in the bottom portion of the chalcogenide material but such occurrence is inherent since the chalcogenide is being doped through diffusion from the top, thus there will necessarily

be more dopant in the top portion than in the bottom portion thus the Ge concentration is relatively higher at the bottom than it is in the top. Furthermore, because Moore discloses that the doped chalcogenide material is amorphous, the thickness of the metal layer must inherently have been less than the "transition thickness".

Response to Arguments

6. Applicant's arguments filed on March 24, 2004 have been fully considered but they are not persuasive. Regarding the Double Patenting issue applicant has refused to address this issue because the two applications upon which the double patenting rejections are based were still pending. While application 09/943,199 is still pending, the record shows that application 09/943,187 has been allowed and thus it is not pending any longer. The Double Patenting rejections still stand. While application 09/943,187 has been allowed the double patenting rejection is still provisional since the case has not been published yet. With respect to the 102 rejection, applicant asserts that Moore does not anticipate the presently claimed invention because it does not disclose that the chalcogenide material remains amorphous. The examiner directs applicant's attention to col. 5, lines 37-43, as point cited in the rejection. In these lines the Moore reference states: "... comprises germanium selenide having silver therein . . . is desirable to maintain the preferred embodiment germanium selenide material in a desired operative substantially amorphous state." This language indicates that the chalcogenide material remains amorphous. Thus, applicant's assertions to the contrary are not persuasive. The rejection stands and it is hereby made final.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

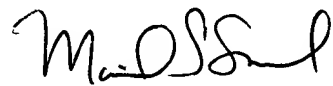
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Renzo N. Rocchegiani whose telephone number is (571)272-1904. The examiner can normally be reached on Mon.-Fri. 8:00 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Smith can be reached on (571)272-1907. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Renzo N. Rocchegiani
Examiner
Art Unit 2825

A handwritten signature in black ink, appearing to read "M. Smith", with a stylized flourish at the end.

MATTHEW SMITH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800